

VYAZNIKOV, N.F.; YERMAKOV, S.S.

Residual stresses in steel under the effect of chemical and heat treatments. Nauch.dokl.vys.shkoly; met. no.3:236-241 '58.  
(MIRA 11:11)

1. Leningradskiy politekhnicheskoy institut.  
(Steel--Heat treatment) (Cementation (Metallurgy))  
(Strains and stresses)

18(7),18(3)

AUTHORS:

Nekhendi, Yu. A., Vyaznikov, N. P.,  
Yermakov, S. S.

SOV/163-58-4-43/47

TITLE:

New Compositions of Casehardening Steel (Novyye sostavy  
tsementuyemoy stali)

PERIODICAL:

Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958, Nr 4,  
pp 240-247 (USSR)

ABSTRACT:

The present investigation was carried out at the laboratoriya termooobrabotki i liteynaya laboratoriya LPI (Laboratory for Heat Treatment and Foundry Work at the Leningrad polytechnical Institute). The results of an investigation of standard steels 18KhGT and 25Kh2GT (formerly used for milling cutters), and those of four new casehardening steels (suggested by the authors) are given. The new steels are: 25Kh2GN2D2F, 25Kh2GN2T and 25KhNFR. The method, the determination of critical points, the investigation of depth hardening capacity, the investigation of mechanical properties, the investigation of the steel for repeated impact, the investigation of the influence of hardening layer depth and steel composition on fatigue impact strength, the investigation of fatigue impact strength of steel in air and

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New Compositions of Casehardening Steel

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in liquid medium is given. The investigation showed that the introduction of nickel and copper into the casehardening steel increases the fatigue impact strength of steel. The fatigue impact strength of steel increases, on account of casehardening, only to a certain depth of the hardening layer. The optimum depth of the hardening layer is obtained at a ratio of 0.18-0.22 between depth of layer and radius. In the investigation of the casehardened samples for fatigue impact strength in liquid medium, the impact endurance limit of the steel decreases strongly both in continuous tests (50-55 hours) and in short-termed tests (30-40 minutes). The new types of steel suggested here can be recommended for the production of parts stressed by repeated impact. There are 4 figures, 2 tables, and 6 Soviet references.

ASSOCIATION: Leningradskiy politekhnicheskii institut  
(Leningrad Polytechnic Institute)

SUBMITTED: October 1, 1957

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SOV/129-59-1-9/17

AUTHORS: Vyaznikov, N.F., Candidate of Technical Sciences and  
Ivanyuk, G.I., Engineer

TITLE: Annealing of Magnetically-soft Iron (Otzhig magnitno-  
myagkogo zheleza)

PERIODICAL: Metallovedeniye i Termicheskaya Obrabotka Metallov,  
1959, Nr 1, pp 39 - 41 (USSR)

ABSTRACT: In the heat-treatment laboratory of the Leningrad Polytechnical Institute imeni M.I. Kalinin, a regime was developed for annealing commercially-pure iron so as to ensure favourable magnetic properties. The influence of the annealing temperature on the magnetic properties was studied of cylindrical specimens, 12 mm dia, 50 mm long and by measuring the permeability  $\mu$  of toroidal specimens cut from 15 mm hot-rolled sheet. The specimens were annealed at 900, 925, 950, 975 and 1 000 °C for three hours; this was followed by cooling of the specimens in the furnace down to 200 °C and from that temperature onwards, cooling in air. To prevent excitation, the specimens were placed into iron boxes and covered with iron chips. In Figure 1, the influence is graphed of the annealing temperature on the size of the ferrite grain and on the coercive force of the iron,

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Annealing of Magnetically-soft Iron

SOV/129-59-1-9/17

determined by a ballistic method; 950 - 960 °C proved to be the optimum annealing temperature at which the lowest coercive force was obtained. In Figure 2, the results are graphed of experiments aimed at determining the influence of the duration of the annealing on the grain size and the coercive force; the greatest softness is obtained if the iron is annealed for 7-8 hours. In Figure 3, the results are graphed of the influence of the cooling speed on the grain size and the coercive force. For obtaining a high impact strength and the maximum possible magnetic softness of commercially-pure iron, the material should be cooled slowly in the furnace to 350 - 400 °C. Following that, the material should be removed from the furnace and allowed to cool more rapidly in air.

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Annealing of Magnetically-soft Iron

SOV/129-59-1-9/17

There are 3 figures and 1 table.

ASSOCIATION: Leningradskiy politekhnicheskiy institut imeni  
M.I. Kalinina (Leningrad Polytechnical Institute  
imeni M.I. Kalinin)

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SOV/137-58-10-21617

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 10, p 166 (USSR)

AUTHORS: Nekhendzi, Yu.A., Vyaznikov, N.F., Yermakov, S.S.

TITLE: New Types of Steel for Manufacture of Cutters of Drilling Bits and Methods of Their Investigation (Novyye stali dlya sharo-shek burovykh dolot i metodika ikh issledovaniya)

PERIODICAL: Materialy Mezhvuz. nauchn. soveshchaniya po vopr. novoy tekhn. v nef. prom-sti, 1958, Vol 3, pp 111-127

ABSTRACT: Factors affecting the destruction of cutters of drilling bits (CDB) were investigated and a number of requirements which must be satisfied by steels of which the CDB are made were developed. Comparative impact-strength tests were performed on 11 different types of steel. It was established that the increase in impact strength, produced during surface hardening of the CDB by means of cementation, is decisively affected by the strength of the carburized layer (CL), rather than by the magnitude and nature of distribution of the residual and surface stresses. It is therefore essential that such alloying elements as Ni, Cu, etc., which tend to reduce brittleness and increase the strength and plasticity of the CL be introduced into

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SOV/137-58-10-21617

New Types of Steel for Manufacture of Cutters of Drilling Bits (cont.)

carburized steels employed for the manufacture of the CDB. The greatest increase in impact strength as a result of carburization is observed when the ratio of the depth of the CL to the radius of the specimen amounts to 0.18-0.22, and the ratio of the surface of the CL to the surface of the entire specimen amounts to 0.36-0.38. It is found that the following types of steels combine optimal mechanical properties with high impact strength: 1) 25Kh2GN2D2F steel containing 0.2-0.28% C, 0.3-0.4% Si, 0.8-1.1% Mn, 1.5-1.8% Cr, 1.8-2.2% Ni, 0.15-0.2% V, and 1.8-2.2% Cu;  $R_C$ , 44-37;  $\sigma_s$ , 158-141 kg/mm<sup>2</sup>;  $\sigma_b$ , 169-152 kg/mm<sup>2</sup>;  $\psi$ , 48.3-53.6%;  $\delta$ , 7.95-10.1%;  $a_k$ , 7.6-13 kgm/cm<sup>2</sup>; 2) 25Kh2GN2T steel containing 0.2-0.28% C, 0.3-0.4% Si, 0.8-1.1% Mn, 1.5-1.8% Cr, 1.8-2.2% Ni, 0.8-0.15% Ti;  $R_C$ , 44-38;  $\sigma_s$ , 150-138 kg/mm<sup>2</sup>;  $\sigma_b$ , 163-152 kg/mm<sup>2</sup>;  $\psi$ , 48.8-52.6%;  $\delta$ , 8.8-9.9%;  $a_k$ , 7.3-9 kgm/cm<sup>2</sup>; 3) 25KhNFR steel containing 0.2-0.28% C, 0.3-0.4% Si, 0.6-0.8% Mn, 0.9-1.2% Cr, 0.9-1.2% Ni, 0.15-0.2% V, 0.003-0.004% B;  $R_C$ , 39-32;  $\sigma_s$ , 147-134 kg/mm<sup>2</sup>;  $\sigma_b$ , 156-145 kg/mm<sup>2</sup>;  $\psi$ , 42.3-49.6%;  $\delta$ , 7.5-8.7%;  $a_k$ , 8-9.38 kgm/cm<sup>2</sup>.

1. Drills--Production 2. Cutting tools--Materials 3. Steel--Physical properties I.B.  
Card 2/2



VYAZNIKOV N.F.

PHASE I BOOK EXPLOITATION 1152

Mikhaylov-Mikheyev, Prokopy Borisovich, Doctor of Technical Sciences

Novyy promyshlennyy metall - titan (A New Industrial Metal, Titanium) Moscow, Mashgiz, 1958. 32 p. 5,500 copies printed.

Reviewer: Vyaznikov, N.F., Candidate of Technical Sciences; Ed.:  
Chechulin, B.B., Engineer; Ed. of Publishing House: Simonovskiy, N.Z.;  
Tech. Ed.: Sokolova, L.V.; Managing Ed. for Literature on the Design  
and Operation of Machinery (Leningrad Division, Mashgiz): Fetisov, F.I.,  
Engineer.

PURPOSE: This booklet is intended to acquaint engineers and technicians in the machine-building industry with the properties of titanium, methods of extracting it, and the technology of processing it.

COVERAGE: The booklet deals with the physical and chemical properties of titanium, methods of extracting it from ores, alloying of titanium with other elements, methods of strengthening titanium, mechanical properties of the metal at ordinary and elevated temperatures, industrial processing of titanium articles, safety techniques, and applications and production costs of titanium.

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A New Industrial Metal, Titanium

1152

No personalities are mentioned. There are 13 references, of which 9 are Soviet, 3 English, and 1 German.

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GO/gap  
1-16-59

VYAZNIKOV, N.F.; POPANDOPULO, A.N.

Increasing the chemical stability of diffusion chromized steel.  
Metalloved. 1 obr. met. no.3:61-62 Mr '58. (MIRA 11:3)

1. Leningradskiy politekhnicheskii institut imeni M.I.Kalinina.  
(Chromium steel--Metallography) (Diffusion)

VYAZNIKOV, N.F.

MIKHAYLOV-MIKHEYEV, Prokopy Borisovich, doktor tekhn. nauk; VYAZNIKOV, N.F.,  
kand. tekhn. nauk, retsenzent; CHECHULIN, B.S., inzh., red.;  
SIMONOVSKIY, N.Z., red. izd-va; SOKOLOVA, L.V., tekhn. red.

[New industrial metal-titanium] Novyi promyshlennyi metall - titan.  
Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1958. 32 p.  
(Titanium) (MIRA 11:8)

~~V.A.~~ VYAZNIKOV, N.F.

AUTHOR: Vyaznikov, N.F., Yermakov, S.S.

32-9-20/43

TITLE: A Method of the Investigation of Fatigue by Impact in Steel  
(Metodika issledovaniya stali na udarnuyu ustalost')

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 9, pp 1095-1097 (USSR)

ABSTRACT: The authors developed a method for the determination of the influence exercised by the liquid medium upon the impact fatigue resistance of steel and carried out a corresponding investigation. The scheme of a machine and the experimental method are described. The recorded curves for continuous impact strength of the case-hardened samples are given in form of the dependence of a number of impacts until destruction upon the energy of the single impact. It is shown that the most resistant steel in the case-hardened state both in the air and in the liquid medium is the steel 20 KhN3A. From a comparison of the curves obtained when investigating in the solution and in the air, it may be seen that in the case of all types of steel a decrease of impact-fatigue-strength may be observed when investigation is carried out in the solution. In the case of short investigations (20-40 min.) in the liquid medium this decrease amounted to 38-42%, in the case of tests of long duration (45-50 hours) it amounts to 53-55%. In order to determine the influence exercised by the composition of the solution on the decrease of the strength of steel,

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A Method of the Investigation of Fatigue by Impact in Steel

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comparative impact-fatigue-tests were carried out with case-hardened samples of 12 KhN2A steel in pure distilled water, in the air, and in a solution. It is shown that the greatest decrease of impact strength was observed in the case of the test carried out in the solution. The investigation of the destroyed sample showed that the working surface of the sample had no oxide film as a result of a test carried out in distilled water, in contrast to the surface obtained by the investigation carried out in the solution. It is assumed that, besides the phenomena of the adsorption and strutting effect, the reduction of impact strength is caused also by the effect of corrosion. In the case of short experiments the effect of corrosion is of no importance, but with an increase of the duration of the experiment the role played by it increases steadily. The data obtained agree well with the tests carried out in nature with drilling milling cutters (the latter developed in a liquid medium under cyclical impact stresses). There are 3 figures, 1 table and 3 Slavic references.

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*Vy. VYAZNIKOV, N. F.*

AUTHORS: Vyaznikov, N. F. and Popandopulo, A.N. 129-3-13/14

TITLE: On increasing the chemical stability of diffusion of chromated steel. (Povysheniye khimicheskoy stoykosti diffuzionno-khromirovannoy stali).

PERIODICAL: Metallovedeniye i Obrabotka Metallov, 1958, No.3, pp. 61-62 (USSR)

ABSTRACT: One of the drawbacks of chromating is the porosity of the diffusion layer, which is observed in some cases, and which brings about pitting corrosion of components operating inside aggressive media. At the Leningrad Polytechnical Institute (Leningradskiy Politekhicheskiy Institut) experiments were carried out on increasing the chemical stability and the surface hardness of diffusion chromated layers by additional cementation by means of carburisation. Diffusion chromating was effected on low carbon steel "20" and armco iron specimens inside a "metalliser" consisting of 50% low carbon ferrochromium, 45% aluminium oxide and 5% ammonium muriate at 1200°C for a duration of eight hours. The carburisation was effected at 930°C for four hours in a carburiser produced by the Bondyuzhskiy Works. A reproduced micro-photo

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On increasing the chemical stability of diffusion of chromated steel. 129-3-13/14

chromated and then carburised as revealed by etching with a 10% solution of nitric acid and alcohol; at the surface of the chromium-cemented layer, a carbide crust of about 0.1 mm thickness, which is not affected by the etching, can be observed. The results of determining the hardness and the corrosion stability after chromating and chromium-cementation are entered in a table which gives the hardness and the chemical stability of carburised and non-carburised chromated specimens. Observation of the corrosion behaviour of chromated and chromated + carburised specimens in sea-water have shown that pitting corrosion can be observed after three days on chromated specimens, whilst no corrosion was observed even after ten days on specimens which were chromated and then case hardened. Formation of a layer of chromium carbides during case hardening of chromated specimens brings about an increase in the density of the chromated layer and an increase of its corrosion stability. This is attributed to the fact that during cementation of chromated specimens a compression takes place of the surface crust due to increase in volume during the carbide formation which

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129-3-13/14

On increasing the chemical stability of diffusion of chromated steel.

brings about welding of the pores in the temperature range of case hardening (930°C). Furthermore, during case hardening of chromated steel, the chromium concentration at the surface of the chromated layer increases owing to counter diffusion of atoms of chromium towards the diffusion front of the carbon and this also results in an increase of the chemical stability of chromated specimens.

There are 1 figure and 1 table.

(Note: Complete translation except for the figure caption and table).

ASSOCIATION: Leningrad Polytechnical Institute imeni M.I.Kalinin.  
(Leningradskiy Politekhicheskiy Institut imeni  
M. I. Kalinina).

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VYAZNIKOV, Nikolay Filippovich; FOMIN, N.V., red.; BERLIN, Ye.N., red.  
izdatel'stva; EVENSON, I.M., tekhn.red.

[Termist, uchebnik dlia proizvodstvenno-tekhnicheskogo obuchenia  
rabochikh. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i  
tavitnoi metallurgii, 1957. 264 p. (MIRA 10:12)  
(Steel--Heat treatment)

В.А.ЗНАМЕНОВ Н.Е.

VYAZNIKOV, N.F.; YERMAKOV, S.S.

Method of testing steel for impact fatigue. Zav.lab. 23  
no.9:1095-1097 '57.

(MIRA 10:12)

(Steel—Fatigue)

RECEIVED BY THE DIRECTOR OF THE FBI ON MAY 10 1968

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BAS'YAS, I.P.; VYAZNIKOVA, T.A.; KOKSHAROV, V.D.; DIXSEYIN, Ye.I.;  
SELIYANOV, I.A.; MAKARYCHEV, A.R.; MAZAROV, K.S.

Optimum conditions for the maintenance of basic open-hearth  
furnace roofs. Stal' 20 no. 12:1086-1092 D '60. (MIRA 13:12)

1. Vostochnyy institut ogneporov i Magnitogorskiy  
metallurgicheskiy kombinat.  
(Open-hearth furnaces--Maintenance and repair)



BAS'YAS, I.P.; KOKSHAROV, V.D.; VYAZNIKOVA, T.A.

Rapidity of deposition zone formation in magnesite-chromite crowns  
of open-hearth furnaces. Ogneupory 26 no.11:519-524 '61.  
(MIRA 17:2)

1. Vostochnyy institut ogneuporov.

BAS'YAS, I.P.; VYAZNIKOVA, T.A.; KOKSHAROV, V.D.

Service of magnesite-chromite refractories in an open-hearth  
furnace roof. Ogneupory 29 no.3:132-136 '64 (MIRA 17:3)

1. Vostochnyy institut ogneuporov.

AUTHORS: Bas'yas, I.P., Vyaznikova, T.A., Raychenko, T.F. 131-58-4-7/17

TITLE: Changes Taking Place in Refractory Forsterite Products When Forming Part of the Wall Structure of a Reverbatory Copper Smelting Furnace (Izmeneniya v forsteritovykh ogneuporakh pri sluzhbe v kladke medeplavil'noy otrazhatel'noy pechi)

PERIODICAL: Ogneupory, 1958, . , Nr 4, pp. 163-168 (USSR)

ABSTRACT: Tests with Forsterite products in a copper smelting furnace were carried out in the USSR for the first time. They were bricked up in the vaults of the charge openings of the furnace and operated at temperatures of 1300-1400°. As a result of the action of temperature and smelt dust Forsterite assumed a zonal structure which is further described. The chemical composition of the worked-off Forsterite products according to zones as well as other data were published in papers by I.P. Bas'yas, M.M. Dvorkind, I.G. Sarkisov and P.F. Postnikov (Ref 1). Fig. 1 shows the structure of the unchanged part of a Forsterite brick and fig. 2 shows its dark-grey zone. Fig. 3 shows the structure of the dark-grey and "spinel-like" contact zone and fig. 4 shows the "spinel-like" zone. Fig.5

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Changes Taking Place in Refractory Forsterite Products  
When Forming Part of the Wall Structure of a Reverberatory  
Copper Smelting Furnace

131-58-4-7/17

shows a Forsterite brick from the vault of a copper smelting furnace after being moistened in water and dried at  $110^{\circ}$ . As may be seen, it is considerably swollen. The influence exercised by gaseous  $SO_2$  on Forsterite-magnesite- and magnesite-chromite products may be seen in table 1. Fig. 6 shows the thermogram of a crushed Forsterite brick which was heated in an  $SO_2$  current. Table 2 gives the results obtained when determining  $SO_2$ -, Mg-, and Fe-quantities. Conclusions: 1.) Reagents of the smelting space in interaction with Forsterite bricks form a "spinel-like" zone. 2.) In the middle of the remaining length of Forsterite products, in the  $700-900^{\circ}$  zone,  $MgSO_4$  with an absorption of  $\sim 10\%$   $SO_2$  is formed. 3.) In consideration of the fact that  $MgSO_4$  is inclined to hydrate, it is necessary to provide for a sure protection against the action of water on the Forsterite brick lining. There are 6 figures, 2 tables, and 1 reference, 1 of which is Soviet.

ASSOCIATION: Ural'skoye otdeleniye Leningradskogo instituta ogneuporov  
(Leningrad Institute for Refractories, Ural Branch)

Card 2/2

VYAZNIKOVITSEV, O.I.

KUMMERMAN, V.G., inzh.; ZHITOMIRSKIY, I.B., inzh.; VYAZNIKOVITSEV, O.I., inzh.

Gyroscopic orientation of Donetsk Basin mines. Ugol' 33 no.2:34-35  
F '58. (MIRA 11:2)

1. Yuzhno-Ural'skoye otdeleniye Soyuzmarkshtresta.  
(Mine surveying) (Gyroscope)

MALISHEVSKIY, V.Ye., kand.tekhn.nauk; VYAZNIKOVTSSEV, Ye.V.

Ways of increasing the output and improving operating  
conditions of the electric drive of a bucket dredger  
scoop chain. Inform. sbor. TSNIIMF no.68. Tekh.  
ekspl.mor.flota no.11:71-83 '61. (MIRA 15:9)  
(Dredging machinery--Electric driving)

MALISHEVSKIY, V.Ye., kand. tekhn. nauk; VIAZNIKOVTSSEV, Ye.V.

New diagram for the protection from overvoltage during the shock loading of electric propulsion systems on icebreakers of the "Kapitan Belousov" [Captain Belousov] type. Inform. sbor. TSNIMF no.81: Tekh. ekapl. mor. flota no.17:79-89 '62. (MIRA 16:6)

(Ship propulsion, Electric--Safety measures)

L 04440-62 EWT(1)

ACC NR: AT6014872

(N)

SOURCE CODE: UR/2914/65/000/039/0015/0021

AUTHOR: Vyaznikovtsev, Ye. V.

ORG: none

TITLE: Relaxation pulse-phase control circuit for thyristor converters 15

SOURCE: Leningrad. Tsentral'nyy nauchno-issledovatel'skiy institut morskogo flota.  
Informatsionnyy sbornik, no. 39(142), 1965. Tekhnicheskaya ekspluatatsiya morskogo  
flota; sudovaya elektrotekhnika (Technical operation of the Merchant Marine;  
electrical engineering on ship), 15-21

TOPIC TAGS: thyristor converter, thyristor inverter

ABSTRACT: A control circuit is suggested in which two well-known devices for  
output-voltage phase variation — saturable reactor and relaxation generator — are  
combined; this combination permits phase shifts up to 180°. First, the supply-  
transformer voltage (see figure) is shifted by controlling the saturable reactors, and  
then the voltage phase is further shifted by relaxation generators designed with small-  
power D235-G thyristors. The latter in conjunction with peak transformers PT shape

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UDC: 621.314.632



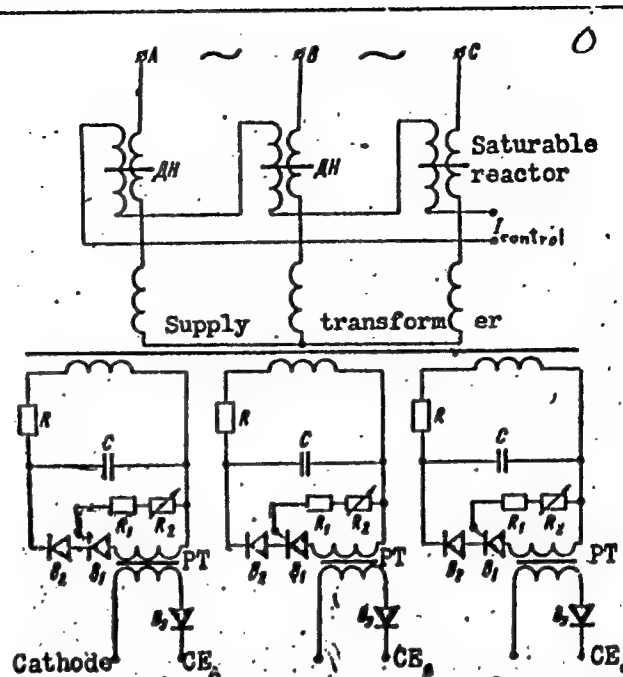
L 04440-67

ACC NR: AT6014872

steep-front control pulses which are applied to the control electrodes CE of the power thyristors. This control circuit includes only standard components manufactured by Soviet industry. Two characteristics and an oscillogram of phase shift measured in an experimental hookup (used to control a d-c thyristor drive) are shown. Orig. art. has: 8 figures and 6 formulas.

SUB CODE: 09 / SUBM DATE: none

ORIG REF: 002 / OTH REF: 001



awm

Card 2/2

VYAZNIKOVTSOVA, O.N.

Effect of chronic irradiation on anti-influenza antibody formation in white rats. Vop. virus. 4 no.1:50-52 Ja-F '59. (MIRA 12:4)

1. Laboratoriya radiobiologii Instituta virusologii imeni D.I. Ivanovskogo AMN SSSR, Moskva.

(ROENTGEN RAYS, effects,

on anti-influenza antibody form. in white rats (Rus))

(INFLUENZA, immunol.

eff. of x-rays on anti-influenza antibody form. in white rats (Rus))

VYAZINITSYN, V.P.

3(1)

PHASE I BOOK EXPLOITATION

SOV/1391

Akademiyu nauk SSSR. Astronomicheskii sovet.

Polnyye solnechnyye zatmeniya 25 fevralya 1952 i 30 iyunya 1954 g.  
Trudy ekspeditsiy po nablyudeniyu zatmeniy (Total Eclipse of the  
Sun, February 25, 1952 and June 30, 1954. Transactions of the  
Expedition to Observe Solar Eclipses) Moscow, Izd-vo AN SSSR, 1958.  
357 p. 1,200 copies printed.

Editorial Board: Pariyskiy, N.N., Candidate of Physical and Mathema-  
tical Sciences (Resp. Ed.); Kononovich, E.V. (Secretary); Kuz'min,  
A.D., Candidate of Technical Sciences; Mogilevskiy, E.I., Candi-  
date of Physical and Mathematical Sciences (Deputy Resp. Ed.);  
Mustel', E.R., Corresponding Member, USSR Academy of Sciences; Ed.  
of Publishing House: Yegorova, N.B.; Tech. Ed.: Kashina, P.S.

PURPOSE: This book is intended for amateur and professional astro-  
nomers interested in eclipse phenomena.

COVERAGE: The present compendium is the fourth in a series published  
by the Academy of Sciences of the USSR on solar eclipses observed  
in the Soviet Union. The present collection reports on the results  
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Total Eclipse (Cont.)

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of observations obtained by scientific teams of 20 research institutions during the total solar eclipses of 1952 and 1954. The reports include studies of the sun's chromosphere, its total coronal brightness, monochromatic glow, structure, polarization photometry, and colorimetry. The results of studies on coronal radio emissions for various wavelengths and on the effect of the sun on the earth's atmosphere, based on the February 1952 and June 1954 eclipses, are presented. The individual articles are accompanied by tables, diagrams and bibliographic references.

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Total Eclipse (Cont.)

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4-9-59

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DUBININ, N.P., doktor tekhn.nauk, prof.; KOMISSAROV, V.A., inzh.;  
VYAZOV, A.F., inzh.

New technological experiment for the development of chill casting  
with the use of metal cores. Izv.vys.ucheb. zav.; mashinostr. no. 12:  
203-209 '63. (MIRA 17:9)

1. Moskovskoye vyssheye tekhnicheskoye uchilishche iemni Baumana.

VYAZOV, F.F., kand. sel'skokhoz. nauk; NEYLOVA, I.V., mladshiy nauchnyy  
sotrudnik

Fattening swine on sugar beets in the forest-steppe of the  
Ukraine. Zhivotnovodstvo 23 no.3:27-29 Mr '61. (MIRA 17:1)

1. Vinnitskaya gosudarstvennaya sel'skokhozyaystvennaya opytnaya  
stantsiya.

VYAZKOV, N. (Tbilisi, Gruzinskaya SSR).

Twelfth All-Union Contest in Antiaircraft and Chemical Defense.  
Za ober. 23 no.14:4 D '47. (MIRA 13:3)  
(Georgia--Air defenses)

VYAZOV, P.A., inzh.

Rendering airtight the connecting pipes of petroleum equipment during testing. Khim.mashinostr. no.3:41 Myas '64.

(MIRA 18 1)

VYAZKOVA-SMIRNOVA, S. F.

USSR/Medicine - Hemosporidiosis  
Medicine - Vermicides

Mar 49

"SK-9" in the Fight Against Animal Hemosporidiosis,  
S. F. Vyazkova-Smirnova, Cand Vet Sci, Sci Res Vet  
Sanitation Lab, City Vet Dept, Moscow City Council,  
3 pp

"Veterinariya" No 3

Preparation "SK-9" is a highly chlorinated turpentine  
containing 58 - 60% chlorine. Tests on 90 head of  
large horned cattle, 15 sheep, and four horses showed  
that "SK-9" has a strong contact insecticidal action  
on ticks, lice, and other parasites. Dipping animals  
in solution baths is most effective.

63/h9T92

VYAZKOVA-SMIRNOVA, S. F.

Apr 49

USSR/Medicine - Mange  
Sheep, Diseases

"Treatment of Mange With the Preparation SK-9,"  
S. F. Vyazkova-Smirnova, Cand Vet Sci, Sci  
Res Vet Sanitation Lab, Gorvetotdel, Mosgo-  
rispolkom, 1 1/2 pp

"Vet" No 4

Dipping sheep twice in a 3% emulsion of SK-9 rids  
them of mange. There are no harmful effects on  
the wool. It should be checked for use on a  
large scale. Composition of SK-9 is not given,  
but may be some type of turpentine compound.

66/49751



67/49T100

USSR/Medicine - Tick Diseases  
SK-9 (Turpentine)

Jun 49

"Reports on the Preparation SK-9" 1 2/3 pp

"Vet" No 6

Since publication of S. F. Vyazkova-Smirnova's article on the use of SK-9, in "Veterinariya," No 3 and 4, many reports have been received, from which quotations are made. The reports state that it is preferable to arsenic, and effective against mange and diseases caused by ticks in pastures.

67/49T100

VIAZKOVA, S. F., Cand. of vet. sci.  
Scientific-Res. Vet.-Sanitary Lab., City Vet. Dept, Moscow City  
Executive Committee

"The effectiveness of "SK-9" in the experiments against  
hemosporidiosis."

SO: Veterinariya 27(3), 1950, p. 14

VIAZKOVA, S. F., Cand. of Vet. Sci.; ZOTOVA, A. A.

All-Union Sci. Res. Lab. of Vet. Sanitation and Disinfection  
Ministry of Agriculture, USSR

"Preparation "SK-9" in the fight against ectoparasites of fowl."

SO: Veterinariya 28(6), 1951, p. 43

VYAZKOVA, S.P., kandidat veterinarnykh nauk; ZOTOVA, A.A., nauchnyy  
sotrudnik.

Effect of DDT, hexachloran and SK-9 preparations upon the organism  
of birds. Veterinariia 30 no.5:53-54 My '53. (MLRA 6:5)

1. Vsesoyuznaya nauchno-issledovatel'skaya laboratoriya veteri-  
narnoy sanitarii i dezinfektsii Ministerstva sel'skogo khozyaystva  
SSSR.

VYAZKOVA, S. F.  
USSR/Medicine - Veterinary

FD 323

Card 1/1

Author : Vyazkova, S. F., Candidate of Veterinary Sciences and Bernadskaya, Z. M.,  
Scientific Associate

Title : New acaricidal preparation "khlorten"

Periodical : Veterinariya, 6, 54-57, June 1954

Abstract : "Khlorten" is a viscous, dark liquid which emulsifies well with water,  
forming a white colored emulsion. Results of experiments on mites,  
Hyalomma anatolicum, showed that "khlorten" emulsion is by far more  
effective in destroying mites than any other insecticide. Three tables.

Institution : All-Union Scientific-Research Laboratory of Veterinary Sanitation and  
Disinfection, Ministry of Agriculture of the USSR; Uzbek Scientific-  
Research Veterinary Institute

Submitted :

~~VYASKOVA~~ S.F., kandidat veterinarnykh nauk, starshiy nauchnyy sotrudnik.  
BERNADSKAYA, Z.M., nauchnyy sotrudnik.

Chlorothen for tick bath for cattle. Veterinariia 33 no.6:72 Ja '56.  
(MLRA 9:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut veterinarnoy  
sanitarii i ektoparazitologii (for Vyaskova); 2. Uzbekskiy nau-  
chno-issledovatel'skiy veterinarnyy institut (for Bernadskaya).  
(Pyridine) (Ticks as carriers of disease)

VYAZKOVA, S. F. (Cand. of Veterinary Sci.)

"Disinsection-shower Installation (DDU-V) For a  
Mechanized Treatment of Animals." 3 figures of the  
installation.

Veterinariya, Vol. 38, No. 6, 1961. p. 79

Vyazkova. S. F. - All-Union Scientific-research Institute of Veterinary  
Sanitation (VNIIVS)

Vyaz'min, S.I.

AUTHOR: Vyaz'min, S.I.

123 - 1 - 15.

TITLE: Organization of Production based on the Principle a Closed Cycle Unit Production Division (Organizatsiya proizvodstva po printsipu predmetno-zamknutogo uchastka).

PERIODICAL: Organizatsiya proiz-va na metalloobrabat. predpriyatiyakh. Sbornik. Riga, 1956, 78 - 94.

ABSTRACT: The Riga Electro-Machine Building plant experience in organizing its production on the closed cycle unit production principle is described. In such shops the assembly of uniform component parts and units assigned to them is carried out; there also a part of preliminary, preparatory operations and machining is done. Such organization of production increases the responsibility of the shop management and personnel for the fulfillment of state planned production requirements comprising all technical and economical indexes. Following problems are analyzed: the problem of systems of planning, the productional connections among the shops, operational

Card 1/2



123 - 1 - 15.  
accounting of production, norms of the production  
movement (progress), organization of technical and  
economic planning under the prevailing working condi-  
tions in shops operating on the principle of closed  
cycle unit production. Flow sheets and sample charts  
are provided.  
P.Ye.A.

Ref.Zh., Mashinostroyeniye, Nr.1, 1957, Item 15.

ASSOCIATION:

PRESENTED BY:

SUBMITTED:

AVAILABLE:

Card 2/2

VYAZNIKOV, N.F.

Category : USSR/Magnetism - Ferromagnetism

F-4

Abs Jour : Ref Zhur - Fizika, No 1, 1957 No 1401

Author : Vyaznikov, N.F.

Inst : Univ. of California, Berkley

Title : Dispersion Hardening of Magnetically-Soft Iron

Orig Pub : Tr. Leningr. politekhn. in-ta, 1955, No 180, 68-73

Abstract : The effects of the annealing temperature, length of soaking and cooling conditions on the values of  $H_c$  and of the permeability of commercially-pure iron were investigated in a search for methods of improving its magnetic properties. The minimum  $H_c$  is obtained by annealing at  $950^\circ$ . Increasing the soaking to 7 -- 8 hours reduces  $H_c$ , owing to the growth of the grain. It is shown that the magnetic properties of annealed iron are affected principally by residual stresses, produced upon rapid cooling from  $400$  --  $500^\circ$ , and by the falling out of the dispersed phase of the chemical compounds. To obtain magnetically-soft iron with maximum softness it is therefore recommended that the iron be cooled in the oven to  $350$  --  $400^\circ$ , and then in air, since slow cooling below  $400^\circ$  is accompanied by formation of the dispersed phase of tertiary cementite and of nitrides, which deteriorate the magnetic properties

Card : 1/2

Category : USSR/Magnetism - Ferromagnetism

F-4

Abs Jour : Ref Zhur - Fizika, No 1, 1957 No 1401

of the iron. A study is made of the mechanical properties as functions of the cooling conditions during annealing. It is shown that specimens cooled in the oven to 400° and to 20° exhibit no difference in the ultimate strength or elongation, but the impact viscosity of specimens cooled in air from 1,000° is almost 30% higher than that of those slowly cooled to 20°. This is attributed to dispersion hardening.

Card : 2/2

S/064/61/000/003/002/009  
B101/B203

AUTHORS: Dalin, M. A., Spivak, R. Ye., Burmistrov, Ye. F.,  
Vyaz'mitinova, L. M.

TITLE: Joint production of isoamylenes and para-tert-amyl phenol

PERIODICAL: Khimicheskaya promyshlennost', no. 3, 1961, 21-24

TEXT: Isoamylenes are used as raw material for the production of isoprene. They are profusely available in the cracking products of petroleum. Their fractional separation is, however, made difficult by the adjacent boiling points of the individual hydrocarbons with 5 C atoms. Therefore, the authors studied the selective production of isoamylenes by alkylation of phenol and subsequent decomposition of the phenol amyl ethers into phenol and olefins. They used as initial substances: 1) pentane amylene fraction with 15-20% isoamylenes, 30-35% n-amylene; 2) phenol with the melting point at 41°C. 95.6% sulfuric acid was used as a catalyst. The first experiments were made with an electrically heated glass column. Phenol was filled into the column, and the required H<sub>2</sub>SO<sub>4</sub> amount was added under stirring. After heating, the vapor of the pentane amylene fraction

Card 1/8

Joint production of isoamylenes...

S/064/61/000/003/002/009  
B101/B203

entered the column from below through a Schott filter. The reaction products were condensed. The dealkylation was performed in a rectifying column with filling from short glass tubes. Liberation of isoamylenes started at 160°C, and was finished at 205°C. However, p-tert-amyl phenol also formed as a by-product. Resin was left behind as a distillation residue. The initial fraction and the resulting isoamylenes were analyzed in a nitrogen flow by absorption in 64%  $H_2SO_4$  (isoamylenes) and 84%  $H_2SO_4$  (n-amylene) in a DTN(VTI) gas analyzer. The authors studied the effect of the temperature at which the phenol was alkylated on the yield in isoamylenes (Fig. 3). At temperatures above 80°C, the amount of amyl phenol increased. 1% of sulfuric acid referred to phenol was found to be the optimum admixture. Larger admixtures increased the amount of resin residue. Fig. 6 shows the yield of isoamylenes as a function of the molar ratio isoamylenes : phenol. If 1:1 is exceeded, the formation of amyl phenol increases (Fig. 7). The optimum established was a pressure of 2 atm at which the reaction products were better condensed than at atmospheric pressure. Still higher pressure may lead to condensation of the initial fraction in the alkylation vessel. As the laboratory apparatus

Card 2/8

Joint production of isoamylenes ...

S/064/61/000/003/002/009  
B101/B203

only permitted a low vapor velocity, tests were made with the pilot apparatus shown in Fig. 8 which permitted a vapor velocity of up to 1 m/sec with strongly reduced resinification. Table 1 shows the results. As amyl phenol was formed besides phenol ethers which decomposed again on heating, the authors studied at what ratio phenol : amyl phenol (designated initial molar saturation) the optimum yield in isoamylenes was obtained. Fig. 9 shows the result. Experiments made under the supervision of M. I. Arkhipov at the Ivanovskiy khimiko-tekhnologicheskii institut (Ivanovo Chemotechnical Institute) showed that the resulting amyl phenol could be used for the production of phenol formaldehyde resins. Papers by V. N. Ipat'yev, I. P. Tsukervanik, and Z. N. Nazarova, V. N. Isagulyants, and P. P. Bagryantseva are mentioned. There are 9 figures, 2 tables, and 8 references: 3 Soviet-bloc and 5 non-Soviet-bloc.

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Joint production of isoamylenes ...

Legend to Fig. 3: a) temperature;  
b) yield of isoamylenes in % of  
the absorbed vapor;

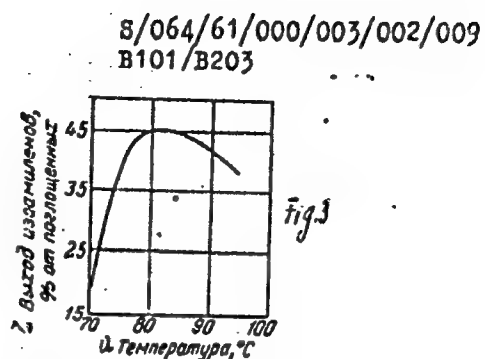


Fig. 3

Legend to Fig. 6: a) molar ratio  
isoamylenes : phenol; b) yield of  
isoamylenes in % of the absorbed  
vapor;

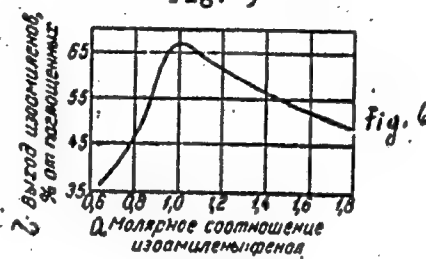


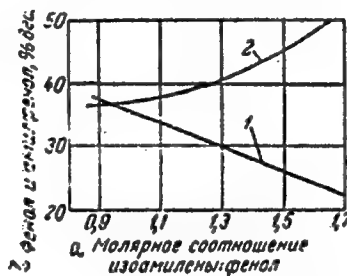
Fig. 6

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Joint production of isoamylenes ...

S/064/61/COO/003/002/009  
B101/B203

Legend to Fig. 7: a) molar ratio  
isoamylenes : phenol; b) phenol  
and amyl phenol, % by weight



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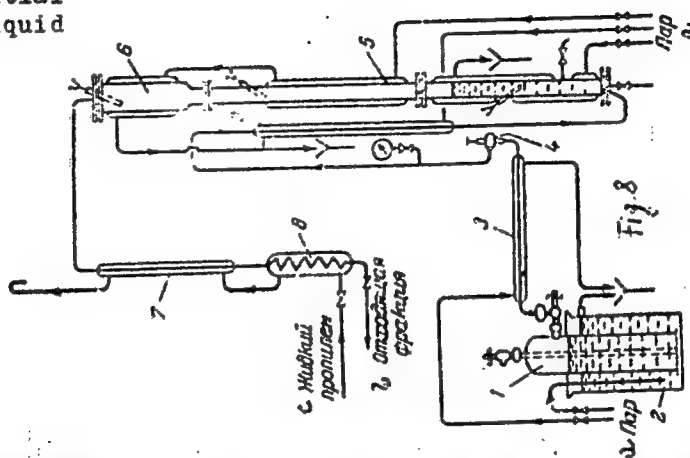
Fig. 7



Joint production of isoamylenes ...

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B101/B203

Legend to Fig. 8: 1) cylinder,  
2) bath, 3) heater, 4) throttle  
valve, 5) alkylating column,  
6) water cooler, 7) cooler for  
propylene, a) steam, b) initial  
fraction not reacted, c) liquid  
propylene



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S/064/61/000/003/002/009  
B101/B203

Joint production of isoamylenes ...

Legend to Table 1: 1) amount of reacted fraction, g, 2) steam velocity in the free cross section of the column, 3) content of isoamylenes (% by volume) in the fractions, a) initial, b) residual fraction, 4) yield of isoamylenes in % of the adsorbed vapor, 5) amount (%) of isoamylenes dealkylated in the temperature range: c) up to, 6) concentration (%) of isoamylenes dealkylated in the temperature range:

1 Пропущено фракции, г	2 Скорость паров в свободном сечении колонны м/сек	3 Содержание изопи- ленов (% об.) во фракциях		4 Выход изопи- ленов % от по- глощенных	5 Количество (%) изопи- ленов, деакилири- рованных в интервале температур		6 Концентрация (%) изопи- ленов, деакилированных в интервале температур		
		а исходной	б отходящей				с до 160°	до 160°	160—205°
					с до 160°	160—205°			
3110	0,05	10,0	5,2	45,2	61,2	35,8	50,8	92,1	
6290	0,10	18,0	8,2	51,4	58,4	41,9	54,2	93,1	
3920	0,23	18,0	6,4	62,3	40,5	59,5	64,2	94,6	
5520	0,29	18,0	6,3	62,8	38,0	62,0	61,3	90,0	
4670	0,55	9,5	0,9	88,1	28,0	72,0	68,3	91,0	
6200	0,87	18,7	2,4	85,2	13,0	87,0	74,5	95,7	
1970	0,90	12,5	1,3	88,0	5,0	95,0	83,2	98,1	

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Joint production of isoamylenes ...

S/064/61/000/003/002/009  
B101/B203

Legend to Fig. 9: a) initial molar saturation, b) yield of isoamylenes in % of the absorbed vapor

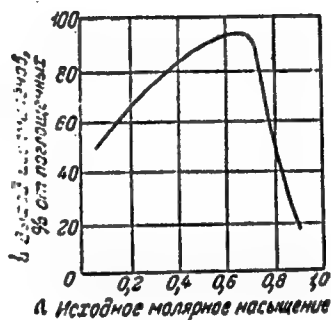


Fig. 9

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S/133/60/000/012/003/015  
A054/A027

AUTHORS: Bas'yas, I.P., Vyaznikova, T.A., Koksharov, V.D., Dikshteyn, Ye. I., Selivanov, I.A., Makarychev, A.R., and Nazarov, K.S.

TITLE: Optimum Working Conditions for Basic Roofs of Open-Hearth Furnaces

PERIODICAL: Stal', 1960, No. 12, pp. 1086-1092

TEXT: In order to investigate the factors influencing the useful life of magnesite-chromite bricks used for open-hearth furnace roofs tests were carried out in the Magnitogorsk Metallurgical Combine (1957-1959) with furnaces fired a) with masut only, ("masut type furnace"); b) with blast-furnace coke and an addition of 30 kg/hour of tar ("gas-type" furnace); c) with blast-furnace coke and an addition of 500-700 kg/hour of coal tar, ("mixed-type" furnace). The tests served to determine the temperature of the magnesite-chromite bricks at various distances from the working surface of the roof, the composition of the atmosphere under the roof, the quantity and composition of dust and the rate of the decomposition in bricks. For these purposes the following devices were employed: ФЭП (FEP) type photoelectric pyrometer, platinum-rhodium and platinum thermocouples, mounted in a 75 x 75 x

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5/133/60/000/012/003/015  
A054/A027

# Optimum Working Conditions for Basic Roofs of Open-Hearth Furnaces

460 mm magnesite-chromite rod, the hot junctions of the thermocouples being at 0, 10, 15 and 30 mm distance from the working surface. Where the hot junction was placed immediately on the surface, it was protected by a silicium-rich cap, with a wall 0.8 mm thick; a single-point potentiometer with a disc scale rotating at 0.5 rph; for gas analysis ГХП (GKhP-3) type and for random tests BTM-2 (VTI-2) type analyzers were used. The melting dust under the roof was collected by a water cooled detachable brass tube connected in series with water filters, gasometers and ejectors. For introducing the apparatus in the under-roof area 7 openings, (80 x 80 mm) were made in the roof. In the tests the relationship between the character of temperature change of the working roof surface and the duration of break in firing, the opening of the charging doors, the time during which cold materials are in the furnace, the duration of various processes and repairs were investigated for all three types of furnaces. It was found that the useful life of the roof in the first place depended on the kind of fuel used, on the place where fuel was fed in the furnace and on thermal loads. The shortest useful life was observed for masut-fired furnaces, working under unfavorable atmospheric conditions: CO was frequently, carbohydrates were occasionally found in the roof zone. Even when

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A054/A027

# Optimum Working Conditions for Basic Roofs of Open-Hearth Furnaces

part of the gas fuel was replaced by a liquid (max. 500-700 kg/hour) the useful life of the roof was shortened, mainly when charging masut or tar through tuyères mounted at the external sides of the fuel tanks. Hydrocarbons are harmful because the ceramic surface of the bricks acts as a catalyst and promotes their decomposition during heating and thereby also the activation of oxidation-reduction processes which deteriorate the iron-rich zones of the refractory bricks. When firing with partly liquid or all-liquid fuel the temperature conditions are also adversely affected because the velocity of temperature changes on the working surface increases during reversing (up to 300°C/min), the temperature drop can attain 200°C and more in this interval; the cooling time of the roof increases during charging while the temperature can decrease to 1,300°C and lower. When cooling below 1,500-1,450°C, the refractory bricks deteriorate considerably under the effect of temperature change, because the working zones of refractory material pass from a semi-plastic heat-resistant condition into a brittle, non-heat-resistant state. As, however, in some cases cooling even below 1,000°C (for instance, during repair) does not increase deterioration of the bricks, it can be assumed that actually not cooling itself, but its accompanying phenomena, such as speed

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A054/A027

Optimum Working Conditions for Basic Roofs of Open-Hearth Furnaces

and frequency of heat changes during the non-heat-resistant period of the working zones in refractory bricks are the causes of their decomposition. The best of operation conditions of the roof is, when it is not cooled below 1,500°C. However, with the present methods of charging high-capacity furnaces this can be obtained only by extending the charging time or by intensifying the combustion of fuel. When having to cool the roof under 1,450-1,500°C during charging, the number of reversals should preferably be reduced by intensifying combustion as much as possible, and by increasing the intervals between reversings. As the changes in the composition of atmosphere under the roof, recurring for 7-9 minutes, also add to the decomposition of the refractory bricks, care should be taken to prevent any reducing medium from entering this area, not even for a short time. Refractory bricks deteriorate more quickly in the first phase of the furnace campaign than in the subsequent phase. This shows that decomposition takes place quickly when there are refractory bricks with a high content of iron oxides in the working area. There are 6 figures, 8 tables and 3 Soviet references.

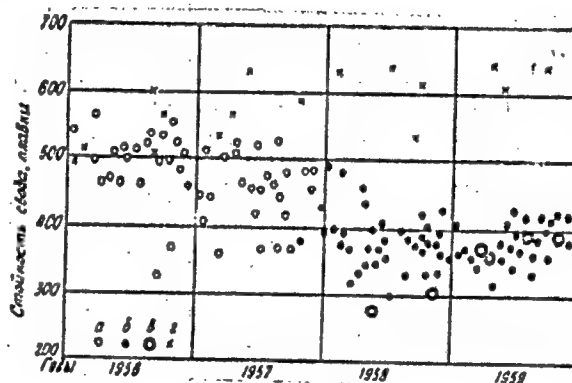
ASSOCIATION: Vostochnyy institut ogneporov (Eastern Institute of Refractory Material), Magnitogorskiy metallurgicheskiy kombinat (Magnitogorsk Metallurgical Combine)  
Card 4/8

S/133/60/000/012/003/015  
A054/A027

# Optimum Working Conditions for Basic Roofs of Open-Hearth Furnaces

Fig. 1. Dependence of the useful life of open-hearth furnace roofs' refractory material on the kind of fuel employed.  
a- feeding tar or masut in the front of bunker; b-idem, laterally; c-firing with masut only; d-firing with gas only.

Vertical legend: useful life of roof, meltings  
Horizontal legend: years.



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S/133/60/000/012/003/015  
A054/A027

Optimum Working Conditions for Basic Roofs of Open-Hearth Furnaces

Composition of gas in the under-roof area %

Table 5

Time elapsing from switching on fuel supply sec	CO <sub>2</sub>	O <sub>2</sub>	CO	H <sub>2</sub>	CH <sub>4</sub>	C <sub>n</sub> H <sub>m</sub>
Period of preheating (masut furnace)						
8	6,0	5,7	9,5	6,5	1,3	0,3
Period of heat finishing (masut furnace)						
10	8,9	5,6	9,1	2,3	0,2	0,9
20	9,8	5,4	10,4	2,9	0,2	0,0
Period of heat finishing (gas furnace)						
0	6,3	5,4	2,3	0,0	0,0	0,0
5	10,3	2,1	0,0	0,0	0,0	0,0
10	8,0	1,7	3,1	0,0	0,0	0,0
15	8,7	0,4	0,2	0,0	0,0	0,0
-10*	7,6	6,8	7,5	1,3	0,0	0,0

\* 10 sec before switching off coke-gas supply

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S/133/60/000/012/003/015  
A054/A027

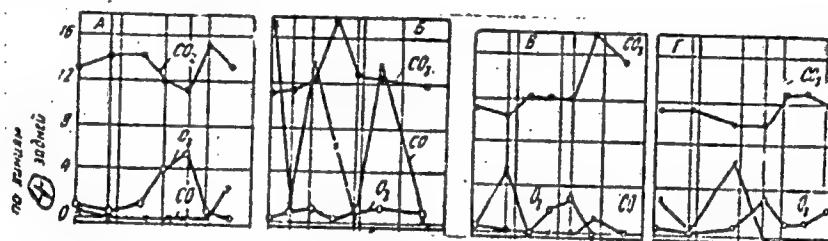
# Optimum Working Conditions for Basic Roofs of Open-Hearth Furnaces

Legend to Fig. 4: Composition of the atmosphere of the under-roof area in a gas furnace at the reversal of fuel (III. opening, vertex of roof)

A-charging; B-pouring of iron; C-melting; D-heat finishing; (a-switching off gas supply; b-switching on gas supply)

Vertical legend: ① Content of  $CO_2$ ,  $O_2$ ,  $CO$ , %, in the gases, according to the frontal, middle and rear line

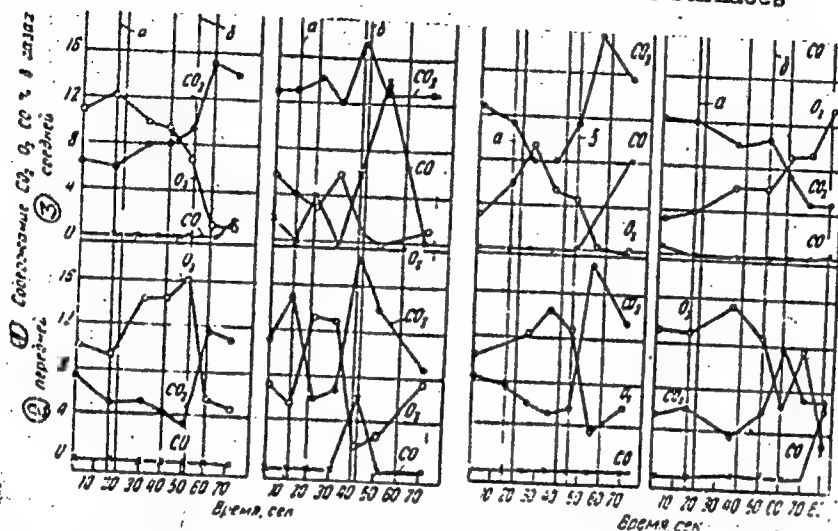
Horizontal legend: Time, sec., time, sec.



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S/133/60/000/012/003/015  
A054/A027

Optimum Working Conditions for Basic Roofs of Open-Hearth furnaces



Card 8/8

MALISHEVSKIY, V.Ye., kand.tekhn.nauk; VYAZNIKOVTSSEV, Ye.V., inzh.

Amplidynes in the electric drive control system of bucket chains  
on multi-bucket dredgers. Sudostroenie 28 no.6:47-50 Je '62.  
(MIRA 15:6)

(Rotating amplifiers) (Dredging machinery)

VIAZOV, A.A. . .

Raising the large-flowered jasmine (*Jasminum grandiflorum* L.).  
Biul. Glav. bot. sada no.30:50-52 '58. (MIRA 11:6)

1. Gosudarstvennyy Nikitskiy botanicheskiy sad.  
(Black Sea Region--Jasmines)

VYAZOV, A.A.

Introducing the chaste tree into cultivation as a spice plant.  
Biul.Glav.bot.sada no.25:64-69 '56. (MIRA 10:1)

1. Gosudarstvennyy Nikitskiy botanicheskiy sad imeni V.M.Molotova.  
(Agnus castus)

VYAZOV, A.A. (Yalta)

Garden balm. Priroda 51 no.12:111 D '62.  
(Melissa)

(MIRA 15:12)

VIAZOV, A.A. (Yalta)

Marjoram. Priroda 50 no.6:115-116 Je '61.  
(Marjoram)

(MIRA 14:5)



**YIAZOY, A.A.**

New forms of sweet basil for the canning industry. *Biul. Glav. bot.*  
sada no.26:28-37 '56. (MLBA 10:2)

1. Gosudarstvennyy Nikitskiy botanicheskiy sad im.V.M.Molotova.  
(Basil) (Spices)

VYAZOV, A.A.

Indoor cultivation of the *Jasminum grandiflorum* L. Priroda 45 no.9:  
112-113 J1 '56. (MIRA 9:9)

1. Nikitskiy botanicheskiy sad, Yalta.  
(Jasmines)

VYAZOV, A.A. (Yalta)

Spice plant. Priroda 50 no.5:123 My '61.  
(C<sub>1</sub>aste tree)

(MIRA 14:5)

VYAZOV, A.A. (Yalta)

Sweet basil. Priroda 51 no.2:117-118 F '62. (MIRA 15:2)  
(Basil(Botany))

VYAZOV, F. F.: Master Agric Sci (diss) -- "The isolation of long-haired semi-  
~~fine-wooled sheep for the forest-steppe zone of the Ukraine~~". Kishinev, 1958.  
19 pp (Min Agric USSR, Kishinev Agric Inst), 150 copies (KL, No 7, 1959, 127)

VYAZOV, L.

ZIREL', B., kandidat tekhnicheskikh nauk; VYAZOV, L., inzhener

Evaluating flour quality by color. Muk.-elev.prom.21 no.8:16-18  
J1 [Ag] '55. (MIRA 8:12)

(Flour)

*VYAZOV, L.I.*

AKBULATOV, Sh.P., kand. tekhn. nauk; VYAZOV, L.I., inzh.

large-panel construction beyond the polar circle. Biul. stroi. tekhn.  
14 no.11:6-9 N '57. (MIRA 11:1)  
(Murmansk--Apartment houses) (Precast concrete construction)

VYAZOV, O.Ye. (Moskva)

Primary immunological reactivity and its morphogenetic role.  
Usp. sovr. biol. 56 no.2:249-264 S.O '63. (MIRA 17:5)



MAYSKIY, I.N., glav. red.; TONGUR, V.S., nauchn. red.;  
BOGOYAVLENSKAYA, N.V., nauchn. red.; VYAZOV, O.Ye., red.;  
GEORGIYEV, O.Ye., red.; DEBOV, S.S., red.; DOBRCKHCTOV, V.N.,  
red.; ZHUKOV-VEREZHNIKOV, N.N., red.; LAGUCHEV, S.S., red.;  
LIOZNER, L.D., red.; LOMAKIN, M.S., red.; PEKHOV, A.P., red.;  
TONGUR, V.S., red.; GOSTEV, V.S., red.

[Nucleic acids and nucleoproteins; transactions] Nukleino-  
vye kisloty i nukleoproteidy; trudy. Pod red. I.I. Maiskogo,  
Tongura, V.S i N.V.Bogoiavlenskoi. Moskva, Mosk. biokhim.  
ob-vo, 1961. 345 p. (MIRA 17:9)

1. Konferentsiya po nukleinovym kislotam i nukleoproteidam.  
1st, Moscow. 1959. 2. Institut eksperimental'noy biologii AMN  
(for Tongur, ostev). 3. Pervyy Meditsinskiy institut imeni  
I.P. Sechenova, Moskva (for Debov).

VYAZOV, O. YE.

Cells

Cellular theory in a new stage of development (Results of the conference devoted to the problem of the development of cellular and noncellular forms of living matter in the light of O. B. Lepeshinskaya's theory). Priroda 41 no. 8, 1952.

9. Monthly List of Russian Accessions, Library of Congress, November 1952, 2, Unclassified.

VYAZOV, O. Ye.

VYAZOV, O. Ye.

Introduction to the study of immunology of embryogenesis. Usp. sovrem.  
biol. 33 no.1:47-63 Jan-Feb 52. (CIAML 21:5)

1. Moscow.

VYAZOV, O. Ye.

VYAZOV, O. Ye. - "Certain Antigenic Characteristics of Embryonic Tissues."  
Sub 4 Mar 52, Acad Med Sci USSR. (Dissertation for the Degree of Candidate in Medical Sciences).

SO: Vechernaya Moskva January-December 1952

VYAZOV O. YE.

MAYSKIY, I.N., professor, redaktor; LEPESHINSKAYA, O.B., redaktor;  
SEVERIN, S.Ye., redaktor; IMSHENETSKIY, A.A., redaktor; GLUSHCHEN-  
KO, I.Ye., professor, redaktor; KHRUSHCHEV, G.K., professor, re-  
daktor; STUDITSKIY, A.N., professor, redaktor; VORONTSOVA, M.A.,  
professor, redaktor; VYAZOV, O.Ye., kandidat meditsinskikh nauk,  
redaktor; ZHUKOVSKIY, M.A., kandidat meditsinskikh nauk, redaktor;  
OBYSOV, N.A., redaktor

[New data on the problem of the development of cellular and non-  
cellular forms of living] Novye dannye po probleme razvitiia  
kletochnykh i nekletochnykh form zhivogo veshchestva; trudy.  
Moskva, Gos. izd-vo med. lit-ry, 1954. 274 p. (MLRA 7:8)

1. Deystvitel'nyy chlen AMN SSSR (for Lepeshinskaya, Severin)
2. Chlen-korrespondent AN SSSR (for Imshenetskiy)  
(Cells)

USSR/General Problems of Pathology. Tumors

U-4

Abs Jour : Ref Zhur - Biol., No 7, 1958, No 3253

Author : Vyazov O.Ya.

Inst : Not Given

Title : Some Results of the Study of Antigenic Properties of Embryonic Tissues.

Orig Pub : V sb.: Vopr. immunologii normal'n. i zlokhachstv. tkaney. M., Medgiz, 1956, 194-226.

Abstract : In RSK, the presence is shown of an antigenic immunity between embryonic tissues (ET) of a hen and the specific antigens of cancer of the mammary gland (CMG) of a human. In experiments on mice and rats positive RSK was noted only with anti CMG serum, or this reaction proceeded in a higher titer than with normal mammary gland anti serum. The antigenic immunity is best in 14 day embryos. The antigenic immunity between ET of a pig and human tumors is expressed still more clearly. The most antigenic similarity with human tumors is possessed by the ET of monkeys. The results obtained are affirmed in

Cord : 1/2

VYAZOV, O.Ye.; TSEYTLIN, P.I.

Contribution to the problem of structural relations relations  
between antigens and antibody molecules. Dokl.AN SSSR 110 no.1:  
119-121 S-O '56. (MLRA 9:11)

1. Institut eksperimental'noy biologii Akademii meditsinskikh  
nauk SSSR. Predstavleno akademikom A.D.Speranskim.  
(ANTIGENS AND ANTIBODIES)

CZECHOSLOVAKIA / General Problems of Pathology. Immunity.

U-1

Abs Jour : Ref Zhur - Biol., No 17, 1958, No 80194

Author : Vyazov, O. E.; Konyukhov, B. V.; Averkina, R. F.; Titova, I.  
I.

Inst : Not given

Title : Immunological Studies in Embryonic Development. I. Antigenic  
Properties of Embryonic Tissues.

Orig Pub : Folia biol. (Ceskosl.), 1958, 4, No. 1, 1-10.

Abstract : No abstract.

Card 1/1



VYAZOV, O.Ye., kand.med.nauk, VOLKOVA, L.S., kand.med.nauk

Some questions in the immunology of embryogenesis. Vest.AMI SSSR  
13 no.11:30-41 '58 (MIRA 11:12)

(IMMUNOLOGY,

immunol. of embryogenesis, review (Rus))

(EMBRYO,

same (Rus))

WIAZOV, G. YE.

"Data on experimental study of the immunology of enterovirus."

report submitted at the 13th All-Union Congress of Bacteriologists, Epidemiologists and Infectionists, 1955.

VYAZOV, O.Ye.; BOCHAROV, Yu. S.

Effect of immune sera on heart and crystalline lens growth in chick embryo cultures. Biul. eksp. biol. med. 47 no.1:83-86 Ja '59.  
(MIRA 12:3)

1. Iz laboratorii immunologii embriogeneza (sav. - kand. med. nauk O. Ye. Vyazov) Instituta eksperimental'noy biologii (dir. - prof. I.N. Mayskiy) AMN SSSR, Moskva. Predstavlena deystvitel'nyx chlenom AMN SSSR N.N. Zhukovym-Verzhnikovym.

(HEART,

tissue culture, eff. of immune sera on growth (Rus))

(CRYSTALLINE LENS,

same)

(IMMUNE SERUMS, effects,

on crystalline lens & heart growth in tissue culture (Rus))